

AMENDMENTS TO THE CLAIMS

1. **(Currently amended)** A polymethylaluminoxane composition generated by thermal decomposition of an alkylaluminum compound having an aluminum-oxygen-carbon bond, the alkylaluminum compound being generated by a reaction between trimethylaluminum and benzoic acid, with toluene as a solvent, wherein:

(i) a mole fraction of methyl groups originating from trimethylaluminum, relative to the total moles of methyl groups existing in the generated polymethylaluminoxane composition, is not more than 26 mol%; and

(ii) the generated polymethylaluminoxane composition has a viscosity of not more than 2.1×10^{-3} Pa•sec at 40°C,

(iii) an aluminum concentration of the generated polymethylaluminoxane composition is in a range of from 9.1 wt% to 9.4 wt%, and

(iv) the generated polymethylaluminoxane composition does not generate gels when stored at 25°C for 90 days.

2-3. **(Cancelled)**

4. **(Withdrawn-Currently amended)** A method of producing a polymethylaluminoxane composition having a mole fraction of methyl groups originating from trimethylaluminum, relative to the total moles of methyl groups of not more than 26 mol% and a viscosity of not more than 2.1×10^{-3} Pa•sec at 40°C, the method comprising the steps of:

causing trimethylaluminum to react with benzoic acid, with toluene as a solvent; and

thermally decomposing the alkylaluminum compound,

wherein a ratio between a mole number of trimethylaluminum and a mole number of oxygen in the oxygen-containing compound represented by the general formula (I) is in the range of 1.25 to 1.40 : 1.

5. (Withdrawn) The method of producing a polymethylaluminoxane composition according to claim 4, wherein

the thermal decomposition is conducted in the absence of a Lewis acid compound in production of the polymethylaluminoxane composition.

6-7. (Cancelled)

8. (Withdrawn) A polymerization catalyst for olefins, comprising as catalytic components:

a transition metal compound represented by the general formula (II),



wherein M represents a transition metal element, and R⁵, R⁶, R⁷, and R⁸ represent organic groups that form together a cycloalkadienyl backbone, such as an alkyl group, an alkoxy group, an aryloxy group, an alkylsilyl group, an alkylamide group, an alkylimide group, an alkylamino group, an alkylimino group, or a halogen atom; and

the polymethylaluminoxane composition according to claim 1.

9. (Withdrawn) A method of polymerizing olefins using the polymerization catalyst according to claim 8.

10-15. (Cancelled)